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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,145	06/27/2003	Paul Leblans	27500-158	6720

7590

08/11/2006

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EXAMINER
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MALEVIC, DJURA

ART UNIT	PAPER NUMBER
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2884

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/609,145

Applicant(s)

LEBLANS ET AL.

Examiner

Djura Malevic

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/26/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36, 41-44, 49-66 is/are rejected.
- 7) ☒ Claim(s) 37--40, 45-48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/27/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

Claims 1 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hell *et al.* (EP 1,113,458) in view of Kano *et al.* (US Patent 4,963,751) and Arakawa (US Patent 4,621,196).

With regards to claim 1, Hell discloses an image storage screen comprising a binderless needle-shaped stimutable phosphor [0020], a light reflecting material [0027] and a substrate [0019]. Hell does not expressly disclose said substrate containing a surface roughness of less than 2 $\mu$ m and a reflectivity of more than 80%.

Kano teaches a substrate comprising a surface roughness of 20 $\mu$ m or less (Col. 7, Line 43), thus including applicants' claimed surface roughness. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Hell to include the surface roughness such as that taught by Kano in order to improve sharpness of the panel (Col. 5, Line 58).

Arakawa teaches a reflecting layer comprising a reflectivity of 95% (Fig. 1). Arakawa further teaches that the reflectance of the light-reflecting layer is preferably as high as possible (Col. 7, Line 65). Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Hell to include the reflectivity of 95% such as taught by Arakawa in order to enhance the sharpness of the image of the phosphor panel (Col. 8, Line 13).

Additionally, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a reflectivity of 80% or more and a surface roughness of  $2\mu\text{m}$  or less, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

With regards to claims 7 –12, Hell discloses said phosphor is a CsBr:Eu phosphor [0022].

With regards to claims 13 - 24, Hell discloses the said substrate overcoated with a reflecting layer [0027], but Hell does not expressly disclose an amorphous carbon support. However those skilled in the art appreciate supports such as amorphous carbon as well known in the art. Therefore, absent some degree of criticality, the use of an amorphous carbon support would have been an obvious design choice in view of the known function equivalence thereof. References such as Homme (US Pub. 20010030291) [0041] and Okada (US Pub. 20020162965) [009-0014] teach a support comprising amorphous carbon.

With regards to claims 25 – 36, Hell does not expressly disclose the reflecting layer as an aluminum layer. However those skilled in the art appreciate reflecting layers such as aluminum as well known in the art. A reference such as Kano teaches a radiation image storage panel comprising a support coated with an aluminum layer. Thus, it would have been obvious to a person of ordinary skill in the art to coat the support with an aluminum layer such as that taught by Kano in order to improve the storage panels' sensitivity and sharpness (Col. 7, Line 16).

Claims 41 – 44 and 49 - 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hell *et al.* (EP 1,113,458) and Kano *et al.* (US Patent 4,963,751) and Arakawa (US Patent 4,621,196) in view of Okada *et al.* (US Pub. 20020162965)

With regards to claims 41- 44, Hell modified does not expressly disclose the screen wherein a moisture-repellent layer is present as an outermost layer. Okada teaches a protective layer 113, which has

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a high moisture resistance [0078,0183,0188], wherein the protective layer is in-between the substrate and the phosphor and coated as an outermost layer (Fig 1). Thus, at the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify Hell to include the protective layer such as that taught by Okada in order to prevent moisture from contaminating the panel.

With regards to claims 49 – 52, Okada teaches that the protective layer is a parylene layer [0078,0183,0188].

With regards to claims 53 – 66, Hell discloses that the image screen used for digital radiograph or computer radiography (Col. 2, Line 42). Note, it is also well known to use image storage screens in computer radiography and digital radiographs.

#### **Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

*The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.*

Claims 53 – 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 53 – 66 provides for the use of a screen or panel according to claims 1, 4, 7, 13, 37, 41, 45 and 53 - 59, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

#### **Claim Rejections - 35 USC § 101**

35 U.S.C. 101 reads as follows:

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*Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.*

Claims 53 – 66 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

#### **Allowable Subject Matter**

Claims 37 – 40 and 45 – 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With regards to claims 37 – 40, the prior art of record does not teach or render obvious a storage phosphor screen, wherein a moisture-repellent layer is present in-between a substrate and a phosphor layer. Although, a reference such as Fleig et al. (US Patent 5,466,947) (Figure 1) teaches a moisture-repellent layer coated on the phosphor (surface away from the substrate and/or support), Fleig fails to suggest in-between the substrate and the phosphor layer. As such, applicant disclosure renders claims 37 – 40 allowable.

Claims 45 – 48 would be allowed based on their dependences.

Note, claims 57 and 64 would also be allowable once the 35 USC § 112 and 35 USC § 101 issues are addressed.

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**Response to Arguments**

Applicant's arguments see remarks filed 4/26/2006 with respect to the rejections of claims 1 – 66, the remarks have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hell et al., Kano et al. and Arakawa (See Above).

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takasu (JP 2000-346996) teaches a substrate with a surface roughness (Ra) of  $0.10 \leq Ra \leq 0.15 \mu\text{m}$ . Fleig et al. (US Patent 5,466,947) teaches a protective layer consisting of parylene. Arakawa et al. (US Patent 4,575,635) teaches a support comprising pits having a mean of  $1 \mu\text{m}$ .


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djura Malevic whose telephone number is 571.272.5975. The examiner can normally be reached on Monday - Friday between 8:30am and 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-24444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**Djura Malevic**  
**Patent Examiner**  
**Art Unit 2884**  
**July 21, 2006**  
**571.272.5975**



**ALBERT J. GAGLIARDI**  
**PRIMARY EXAMINER**